Award Information
Agency: National Aeronautics and Space Administration
Branch: N/A
Contract: NNX11CA67C
Agency Tracking Number: 094341
Amount: $599,969.00
Phase: Phase II
Program: SBIR
Solicitation Topic Code: S3.04
Solicitation Number: N/A
Timeline
Solicitation Year: 2009
Award Year: 2011
Award Start Date (Proposal Award Date): 2011-06-01
Award End Date (Contract End Date): 2012-11-30
Small Business Information

Microcosm, Inc.
CA, Hawthorne, CA, 90250-6708
DUNS: 118563519
HUBZone Owned: N
Woman Owned: Y
Socially and Economically Disadvantaged: N
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Abstract
Microcosm, in conjunction with the Scoprius Space Launch Company (SSLC), will develop a Unibody Composite Pressurized Structure (UCPS) for in-space propulsion that constitutes a clean break from traditional spacecraft design by combining what were traditionally separate spacecraft primary and secondary support structures and metal propellant tanks into a single unibody, all-composite construction that is stronger, much lighter weight, more robust and reliable, and capable of supporting much higher pressures and smaller volume than previous approaches. The single, all-composite structure will include linerless, high-pressure propellant tank(s), composite bosses, flanges, longitudinal and circumferential stringers with integral shelves, holding mechanisms, and attach features to support all of the spacecraft equipment and replace the separate, mission-critical primary support structure, tanks, struts, straps, braces, clamps, and brackets traditionally required to hold subsystem parts in place. The new structure has nearly 0 CTE over a temperature range from cryogenic to over 100 C. Phase I will determine requirements, create a preliminary UCPS design relevant to a potential SMD mission, and test material compatibility with various in-space propellants. Phase II will build two UCPS structures employing test masses for spacecraft components, and complete qualification and burst testing on one of them (including 0-g testing).

* Information listed above is at the time of submission. *